

WHAT IS CLAIMED IS:

- 1 1. An IR lens comprising:
2 a first surface; and
3 a second surface,
4 wherein the IR lens is a moldable IR transmissive material and at least one
5 surface is an optically significant surface.
- 1 2. The IR lens of claim 1, wherein the optically significant surface
2 comprises a surface relief holographic grating.
- 1 3. The IR lens of claim 2, wherein the optically significant surface is
2 formed directly in a molding operation.
- 1 4. The IR lens of claim 1, wherein the moldable IR transmissive material
2 is a chalcogenide glass.
- 1 5. The IR lens of claim 1, wherein the moldable IR transmissive material
2 is an arsenic selenide glass.
- 1 6. The IR lens of claim 1, wherein the lens is manufactured as a unitary
2 structure in a molding operation.

1 7. An IR lens comprising:
2 a first surface; and
3 a second surface,
4 wherein the IR lens is made from a moldable IR transmissive material and
5 wherein at least the second surface is an optically significant surface molded from
6 the moldable IR transmissive material.

1 8. A method of forming an IR lens comprising the steps of:
2 heating a moldable IR transmissive material above the glass transition
3 temperature;
4 molding the moldable IR transmissive material into a shape for an IR
5 lens with at least one surface that is an optically significant surface; and
6 cooling the moldable IR transmissive material to below the glass
7 transition temperature.

1 9. The method of claim 8, further comprising the step of:
2 coating at least a first surface with an optical surface coating.

1 10. The method of claim 8, wherein molding is slump molding, casting, or
2 injection molding.

1 11. The method of claim 8, wherein cooling is ambient cooling or
2 quenching.

1 12. The method of claim 8, wherein the moldable IR transmissive material
2 is an arsenic selenide glass.

1 13. An IR lens comprising:
2 a first spherical surface; and
3 a second nonspherical surface, wherein the second nonspherical surface
4 comprises a surface relief holographic grating,
5 wherein the lens is made from a moldable IR transmissive material.

1 14. The IR lens of claim 13, wherein the moldable IR transmissive material
2 is a chalcogenide glass.

1 15. An infrared imaging optical arrangement comprising:
2 a first lens; and
3 a second lens, wherein at least the first lens is made from a moldable
4 IR transmissive material and wherein at least the first lens has at least one optically
5 significant surface.

1 16. The infrared imaging optical arrangement of claim 15, wherein the
2 optically significant surface comprises a surface relief holographic grating.

1 17. The IR lens of claim 15, wherein the moldable IR transmissive material
2 is a chalcogenide glass.